



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,687	10/16/2003	John Gavin MacDonald	KCX-840 (19192)	8963
22827	7590	07/22/2005	EXAMINER	
DORITY & MANNING, P.A. POST OFFICE BOX 1449 GREENVILLE, SC 29602-1449			SPERTY, ARDEN B	
			ART UNIT	PAPER NUMBER
			1771	
DATE MAILED: 07/22/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/686,687

Applicant(s)

MACDONALD ET AL.

Examiner

Arden B. Sperty

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 4/14/05 Election.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 35-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date several.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

NON-FINAL OFFICE ACTION

Election/Restrictions

1. Applicant's election of claims 1-34 in the reply filed on 4/14/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on 2/02/04, 4/22/04, 6/14/04, 7/14/04, 11/18/04, 5/26/05 were timely filed before the mailing of a first action. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 18 recites the limitation "the film." There is insufficient antecedent basis for this limitation in the claim. Neither claim 13, nor the claims from which it depends, require a film. The claim is not examined.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1771

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-6, 8, 24, 27, 29-30, and 32-33 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5480636 to Maruo et al.

6. The Maruo reference teaches titanium oxide substrate particles supporting zinc oxy or zinc oxy and silicon oxy compounds thereon (see abstract). The coated titanium particles are used as a deodorizer for sanitary objects such as paper diapers and sanitary napkins (see abstract). The titanium oxide particles have a surface area of 100 m²/g (col. 4, lines 33-39), thus meeting the limitations of claims 3 and 4.

7. Regarding claims 24 and 27, the claimed deposition processes are not seen to provide patentable distinction over the prior art to the structure of the final product.

8. Regarding claims 29-30 and 32, the abstract recites use of the coated titanium particles in paper diapers and sanitary napkins.

9. Regarding claims 2 and 33, the structural implications of the claims are met by the teachings of Maruo. Using the product “to protect against chemical warfare agents” is not given weight because no particular structure is apparent. In other words, the only structural implications of the claim are a substrate and a nanoparticle coating. These limitations are met by the prior art, therefore the structure of the claim is anticipated.

10. Claims 1-10, 20-21, 24-25, 27, 33 are rejected under 35 U.S.C. 102(e) as being anticipated by recently allowed US PGPub 2002/0149656 to Nohr et al.

11. The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

12. The Nohr reference teaches nanoparticle based inks for printing fabrics and paper products (see Abstract).

13. Regarding claims 1 and 8-9, the reference teaches nanoparticles, such as those listed in paragraph 24, coated with polymer-colorant layers of alternating charges (para. 13). The coatings include colorant stabilizers (para. 76) including a metal ion (para. 78, 81). The nanoparticles of paragraphs 23-26 meet the structural limitations of claims 3-4 and 6-7, surface area being directly related to diameter.

14. Claim 2 does not actually recite any positive limitations, therefore the structure is the same as that of claim 1 and is anticipated. Claim 5 does not recite any positive limitations for the structure of claim 1; claim 5 is drawn to an intended use but does not further limit the structure of the coating of claim 1.

15. Regarding claim 10, the reference teaches a fibrous substrate (see Abstract; para. 101), coated with nanoparticle based inks present in a thermoplastic carrier (para.

Art Unit: 1771

109). The thermoplastic carrier is analogous to the claimed binder. The nanoparticles are coated with polymer-colorant layers of alternating charges (para. 13).

16. Regarding claims 20, 24 and 27, the reference teaches nanoparticle based inks comprising nanoparticles layered with alternating charged layers (para. 22) and applied to fabrics (para. 101). Paragraph 101 also broadly anticipates claims 21 and 25 because non-woven fabrics are disclosed by the reference. The process limitations required by claims 24 and 27 are not seen to impart patentable distinction to the finally claimed product.

17. Regarding claim 33, the reference teaches clothing coated with the disclosed nanoparticles (para. 101). Since the materials, composition, and structure of the clothing product are the same as that which is claimed, it is understood that the product will share the same properties as the claimed invention.

18. Claims 1-9, 24, 25, 27, 29-30, and 32-34 are rejected under 35 U.S.C. 102(e) as being anticipated US PGPub 2003/0203009 to MacDonald.

19. The MacDonald reference teaches high surface area nanoparticles having metal ions adsorbed thereon (para. 16). The nanoparticles are coated onto substrates such as synthetic or cellulosic fibrous cloths (para. 32).

20. The surface area of the particles meets the limitations of claims 3 and 4 (para. 18). The particle diameter anticipates the limitations of claim 7 (para. 19).

21. Nanoparticles used in the invention of the reference include those listed in claim 8 (para. 20). Adsorbed ions are those required by claim 9 (para. 22).

Art Unit: 1771

22. Nonwoven materials, such as spunbond or meltblown materials, may be used as substrates for the nanoparticle coatings (para. 32). Personal care products incorporating the nanoparticle coatings are disclosed (para. 35). The process by which the coatings are applied does not impart structural distinction. Thus the limitations of claims 24, 25, 27, 29-30, and 32 are met.

23. Regarding claim 33, the reference teaches various fabric substrates coated with the disclosed nanoparticles. Since the materials, composition, and structure of the clothing product are the same as that which is claimed, it is understood that the product will share the same properties (ability to protect against chemical warfare agents) as the claimed invention.

24. Regarding claim 34, a fabric used to absorb ethylene gas is prepared by coating a fabric substrate with permanganate-ion-coated alumina nanoparticles (para. 33). Although the fabric in the embodiment is polymeric, the invention is not limited to specific embodiments. The reference also anticipates fabrics made of cellulosic materials (para. 32).

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1771

26. Claim 7 is rejected under 35 USC 103(a) as being unpatentable over USPN 5480636 to Maruo as applied to claim 1 above.

27. Although the reference does not specifically cite the particle diameter, the types of particles used, considered along with the particle surface area, is seen to render obvious the claimed particle diameter.

28. Claims 11-17, 19, 22, 23, 26, and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US PGPub 2002/0149656 to Nohr, et al, as applied to claims 10, 20, 24, and 27 above.

29. The Nohr reference teaches coated woven and non-woven fabrics, textiles, plastics, clothing (para 101), and cites specific tests performed with synthetic fabrics such as nylon, polyester, acrylic, and acetate (Table 3, Table 5, Table 8). Although the reference does not specify polyolefin fabrics, as required by claim 11, it would have been obvious to one of ordinary skill in the art to substitute one known polymeric fabric for another known polymeric fabric, according to the ultimate intended use of the fabric. Absent a showing of unexpected results with a polyolefin fabric, no patentable distinction can be seen.

30. The Nohr reference further teaches nanoparticles such as those described in paragraphs 24 and 43-44. Regarding claim 13, the last sentence of paragraph 101 teaches application to the fabric surface. The limitations of claims 14-16 are met by any structure meeting the limitations of the claims from which 14-16 depend. Claims 14-16 do not require further structure; it has been held that when a product is the same then

Art Unit: 1771

the same properties thereof will follow. Elevating zeta potentials of the particles is discussed in Example 17 of the reference. Regarding claim 17, a wide range of particle diameters are taught (para. 26). The amount of binder can be determined by one of ordinary skill in the art without undue experimentation, and therefore would have been obvious, if not explicitly disclosed by the reference.

31. Regarding claims 22, 26 and 28, the amount of binder can be determined by one of ordinary skill in the art without undue experimentation, and therefore would have been obvious, if not explicitly disclosed by the reference.

32. Regarding claim 23, the reference is not concerned with further structural details beyond the general type as set forth in paragraph 101. However, the broad substrate varieties of paragraph 101, including nonwoven fabrics, is seen to encompass commonly known nonwoven fabric laminates such as spunbond/ meltblown/ spunbond (SMS), spunbond/ film/ spunbond (SFS) or the like. The examiner takes official notice that SMS, SFS and other similar laminates are notoriously well-known in the art and that it is notoriously well-known to print said laminates.

33. Regarding claims 29 and 32, the reference is not concerned with the final shape of the substrate to which the nanoparticles are applied. Since the phrase "personal care product" does not imply any specific structure, the claim is seen to be met by the nanoparticle coated fabrics taught by the reference. The use of claim 32 does not impart further structure. Regarding claim 30, paragraph 101 teaches cellulosic substrates. Also see examples. Regarding claim 31, the nanoparticles are coated with polymer-colorant layers of alternating charges (para. 13).

Art Unit: 1771

34. Claims 10-17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US PGPub 2003/0203009 to MacDonald.

35. Although the reference is not concerned with the incorporation of a binder in the substrates, the examiner takes official notice that the incorporation of binders in the substrates disclosed by Applicant is notoriously well-known and would have been obvious to one of ordinary skill in the art. For example, paragraph 31 discloses filters and wallpapers. The use of binder in the fabrication of filters and wallpapers is obvious, if not inherent. The absorbent articles of paragraph 35 typically comprise a binder to either bind fibers within a layer, bind layers to each other, or for other binding purposes. The amount of binder is dependent upon the ultimate intended use of the product, the type of fibers used, the method of forming the product, and innumerable other factors. Therefore, the incorporation of a binder in the claimed amounts does not provide patentable distinction absent a showing of unexpected results.

36. Regarding claims 11-13, polyolefin substrates (para. 32) are coated with the nanoparticles of the invention (para. 20).

37. Regarding claims 14-16, zeta potentials are described throughout the reference. Further, it has been held that when structures and materials are the same, it follows that the properties associated therewith will also be the same.

38. Disclosed particle diameters meet the limitation of claim 17 (para. 19).

Double Patenting

39. Claims 1-33 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 36-43, 52-59, 68,

Art Unit: 1771

and 70-74 of Application No. 10/686939. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are drawn to overlapping inventions.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

40. Claims 1-34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of Application No. 10/687425. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are drawn to overlapping inventions.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

41. Claims 1-34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 15 of Application No. 10/687269. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are drawn to overlapping inventions.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Art Unit: 1771

42. Claims 1-34 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-58 and 63-67 of Application No. 10/137052. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims are drawn to overlapping inventions.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

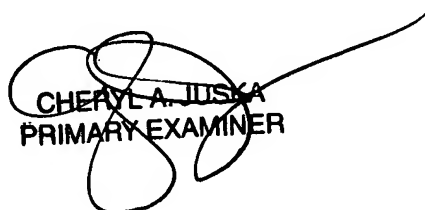
43. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arden B. Sperty whose telephone number is (571)272-1543. The examiner can normally be reached on M-Th, 08:00-16:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571)272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Arden B. Sperty
Examiner
Art Unit 1771

Junly 6, 2005


CHERYL A. JUSKA
PRIMARY EXAMINER